Notes on South Australian Decapod Crustacea. Part I.

By W. H. Baker.

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Plates XXVII. to XXXI.

In presenting a first paper of a series of studies of South Australian *Decapoda*—a department of our natural history that has heretofore been much neglected—I wish to acknowledge the kind assistance of the President of the Royal Society of South Australia, who has allowed me the use of the specimens from his dredging excursions; Professor Stirling, F.R.S., and Mr. Zietz, F.L.S., of the Adelaide Museum; also of Mr. S. W. Fulton, of Melbourne, who is studying the same branch, and whose help I much appreciate; and also of Mr. G. M. Thomson, F.L.S., of Dunedin, who has been good enough to look through the pages and make some necessary corrections.

In the Proceedings of the Zoological Society, London, for 1863, appear descriptions and figures of a group of shrimps from South Australian waters, by the late Mr. Spence Bate; these were dredged, he says, in about four fathoms, in St. Vincent Gulf by Mr. Angas, and were forwarded by him to the British Museum. The first mentioned is a remarkably beautifully coloured species, *Angasia pavonina*, which Mr. Angas himself has figured and coloured, and Mr. Bate states that the genus *Angasia* was instituted by Mr. White, of the British Museum, to receive it.

Since this record I am able to find mention of the following species which have been referred to the same genus, viz.:—

A. lanceolata, Stimpson, from Hongkong.

A. carolinensis, Kingsley, from the east coast of the United States.

A. Stimpsoni, Henderson, from the Gulf of Martaban.

To these I wish now to add four species from our coast which are more differentiated by their external contour than by the details of their structure.

The Rev. T. R. Stebbing, in his "History of Recent Crustacea," remarks at page 233 that "little agreement exists as to the precise classification of some of the genera of the family *Hippolytidæ*"—to which *Angasia* belongs; and Mr. Bate, in his "Macrura of the Challenger," sets out the genera with which he is there engaged as chiefly differentiated by the condition of the mandibles and the number of joints into which the carpus of the second pair of legs is divided.

According to this classification the genus *Angasia* would come in between the genera *Latreutes* and *Hippolyte*, for in it the mandible is without appendage, and the carpus of the second pereiopod is three-jointed, a like condition to what obtains in *Latreutes*, and the question would arise: Why not unite the two genera? The reply must be that they differ sufficiently in other respects to warrant the separation.

There is no doubt that the family greatly requires revision, and if the addition of a few more species renders this more imperative, good will be accomplished.

Sub-order, MACRURA.

Tribe, CARIDEA.

Family, HIPPOLYTIDÆ. (Legion, POLYCARPINEA.)

Genus **Angasia,** *White.*

Body usually elongate.

Carapace without a spine on the gastric region, and without supra-orbital spines.

The rostrum usually is very long, laterally ridged, pointed rigid, tapering, and strongly keeled below, with spines only on the under side.

The antennules are much shorter than the rostrum, and usually shorter than the antennal scales.

The antennal scales also are shorter than the rostrum, long, narrow, robust, regularly tapering to a terminal spine.

The mandibles consist only of the molar process.

The third maxillipeds are short, spatuliform, with the terminal joint short, and strongly spined on its anterior border without exopod.

The second pereiopods have a triarticulate carpus.

The branchiæ are five.

This genus differs from *Latreutes*, in the more elongate form, the shape of the rostrum, in the shape and proportionate length of the joints of the third maxillipeds, and in the proportionate lengths of the carpal joints of the second pereiopods, and in the pleura of the pleon and other minor characters.

Angasia elongata, *n. sp.* Pl. xxvii., figs. 1-4.

Body very elongate, narrow in the vertical direction, especially anteriorly, and laterally compressed.

Carapace more than one-third the length of the body, exclusive of rostrum and telson, about as long as the first four segments of the pleon, smooth, not markedly depressed anteriorly, its anterior margins have rather long subocular spines with slight lobes just above them, the external angles

also are strongly spined and lie posterior to the subocular at the lower level.

The pleon is very slightly geniculate at the third segment. The first five segments do not differ much in dorsal length except the first, which is shortest, and their sides are not very deeply produced, that of the fifth is produced posteriorly well along the sixth—in some specimens nearly its whole length—and there is a small spine on its posterior descending border. The sixth segment is much longer than the dorsal portion of the fifth, its posterior margin bears a lobed spine projecting over the base of the telson on each side, and the posterior angles also are very acute.

The telson is slightly longer than the sixth segment, narrow, arched, and tapering with the usual four quadrately placed spines, which are placed rather low down; it terminates with six strong spines, two of which are small and median, one above the other, the next two outer and longer, the external two short.

The rostrum is rather more than one and a half times as long as the carapace, straight or slightly curved upwards, gradually tapering, with its base occupying the whole of the interocular space, having a dorsal and two lateral ridges; deeply carinate below, especially at the proximal end, with numerous spiniform teeth which decrease in frequency forwards, but do not reach near to the apex. Between the teeth there are soft hairs. (Three specimens had respectiveiy sixteen, eighteen, and over thirty teeth.)

The ophthalmopods are rather short, they are pyriform, and capable of being partially covered by the lateral ridges of the rostrum.

The antennules are short and partially obscured by the lateral ridges of the rostrum. The peduncle does not reach half the length of the antennal scale, the first joint is excavate above to receive the ophthalmopod, the stylocerite spine reaches a little beyond its end, the second joint is longer than the third, and together they are about as long as the first joint. The upper flagellum is thickish and shorter than the peduncle, the lower one slender and longer, but does not reach to the end of the antennal scale. The antennal scales are very long, narrow, rigid, and taper to acute terminal teeth. The second peduncular joint of the antenna has a strong external spine at the base of the scale, and the remaining joints are only about one-fifth the length of the scale. The flagellum is slender and long.

The third maxillipeds are short, only reaching a little beyond the anterior angles of the carapace. The first of the three joints of the endopod is long and a little curved, or twisted proximally, the second very short, the third is

short but longer than the second, moderately broad, strongly setose, wedge-shaped in a side view, its distal margin furnished with seven strong teeth, the apical one stronger than the rest. The first pair of pereiopods are short, moderately robust, not reaching as far as the third maxillipeds. The merus is a little longer than the carpus and is scarcely excavate at its distal end, the carpus is cup-shaped, and distally hollowed to receive the rounded proximal end of the propodus; it bears above a small process tipped with hairs and a little row of setæ near its distal end on the inner side, the palm is a little longer than the carpus, and is articulate to it at its lower edge, it tapers somewhat and is slightly curved, its proximal end is rather swollen above. The fingers are setose, excavate, rather weak, much shorter than the palm, with terminal curved teeth. The second pair of pereiopods are very slender, weakly chelate, reaching as far as the first pair. The ischium and merus are subequal in length, the carpus longer, it widens a little distally, and its third division is subequal to the first, the middle one being short; the propodus narrows distally and is slightly curved. It is a little longer than the third division of the carpus, the fingers are very weak and setose at their tips.

The third and fourth pairs of pereiopods are rather long, moderately robust, reaching further forward than the maxillipeds, the meri are long, and are provided each with a distal spine below. The carpi are a little produced distally above, the propodi are more than twice as long as the carpi, they are a little compressed, and narrow somewhat distally and are moderately spinose behind, the dactyli are slightly curved, strong, and terminally bifid, with a few strong spines towards the proximal ends. The fifth pair are shorter, but otherwise similar. The pleopods are long and well developed in both sexes.

The uropods are a little longer than the telson, they are narrow, the rami are nearly equal in size and well developed, the outer ramus has a sinuate division and two subterminal spines on the outer side.

Length of carapace, 15 mm.
Length of pleon, 25 mm.
Length of rostrum, 22 mm.
Length of antennal scale, 8 mm.

Dredged by Dr. Verco, about fifteen fathoms, S.A. coast; also specimens from Port Victor from Mr. Pullein.

Types in the Adelaide Museum.

Angasia kimberi, *n. sp.* Pl. xxvii., fig. 5.

Body arched, much compressed laterally, elongate, moderately slender, tapering anteriorly and posteriorly from the

third segment of the pleon. Carapace nearly one-third the length of the body, excluding rostrum and telson, dorsally depressed from near the posterior end forward, anterior margin as in the preceding species.

The pleon is shaped differently from that of the preceding species, the pleura are deeper, and it is more geniculate at the third segment, the fifth segment is well produced posteriorly to about half the length of the sixth, and bears a spine on the oblique posterior margin; the sixth segment is also similarly spined as in *A. elongata*, and is about twice as long as the dorsal portion of the fifth. The fifth segment is a little longer than the first, the third and fourth and second and fifth subequal in length.

The telson is unfortunately broken.

The rostrum is very long (also broken in specimen), much longer than the antennal scales in the same oblique line with the anterior part of the carapace, it is dorsally and laterally ridged, the teeth on the lower carina are numerous and rather crowded.

The ophthalmopods are as in *A. elongata*, as also are the rest of the appendages in most of their parts.

The second pereiopods have the carpus equal in length to the merus, of its three joints the third is longer than the first.

Length, excluding rostrum and telson, 37 mm.

This species differs from the preceding in the more laterally compressed and rather less slender and tapering body, the arched shape, and somewhat deeper pleon segments, and in the depressed carapace; it is also like *A. pavonina*, but differs specifically in the elongate, many toothed rostrum, and the shape of the first and second pereiopods.

Dredged by Mr. W. J. Kimber in about four fathoms, off Port Willunga.

Type, one female, in Adelaide Museum.

Angasia robusta, *n. sp.* Pl. xxviii., figs. 1-8.

Body robust, smooth, moderately elongate.

Carapace not depressed as in *A. kimberi*, spined anteriorly as in the same, also bearing about the same relation in length.

The rostrum is only a little longer than the carapace, it is very strong, slightly curved upwards, and tapers to a point, it has dorsal and lateral ridges, which are very pronounced, and a deep carina below, provided with five to seven small, remote teeth.

The ophthalmopods are not so pyriform as in the preceding species.

The stylocerite spine of the antennular peduncle is strong and extended beyond the first joint, the second and third joints are subequal in length, the upper flagellum is short, about equal in length to the second and third joints of the peduncle together, the whole scarcely half the length of the antennal scale; the lower flagellum is very slender, and a little longer than the upper.

The antennal scale is long, reaching about three-fourths the length of the rostrum, rigid, narrow, tapering, the external spine on the second joint of the peduncle is not very acute, the remainder of the peduncle is only about one-sixth the length of the scale, the flagellum is nearly as long as the body of the animal.

The third maxillipeds are very robust, reaching a little further than the anterior angle of the carapace, the terminal joint is very broad at the end, and is provided with 11-13 strong, but short, teeth, six or seven of which are on the inner margin.

The first pair of pereiopods are scarcely different from those of the preceding species, except that the propodus is not so swollen above at the proximal end, and the joints are comparatively a little longer.

The second pereiopods are long, slender, and reach forward a little beyond the maxillipeds. The merus is a little shorter than the carpus, the first and third carpal divisions are subequal. The ischium of this joint is marked with two small spines, which are close together and on the inner side.

In the third, fourth, and fifth pairs the carpal joints and the dactyli are longer than in the preceding species.

The pleon is moderately geniculate at the third segment. The first segment is the shortest, the third more than twice as long as the first, the second and fifth are subequal in length, and the fourth a little longer, the sixth is not much longer than the fifth, the pleura of the segments are very deeply produced, almost covering the peduncles of the pleopods in the females; their posterior angles are scarcely rounded or abrupt, the posterior oblique margin of the fifth is without spine, and is produced much deeper than the sixth segment, the postero-lateral margin of the sixth segment has a large lobe, tipped with a small spine projecting over the base of the telson.

The telson is longer than the sixth segment of the pleon, it narrows quickly, tapering to end in four spines, the two inner ones longer. The uropods are longer than the telson, the outer ramus is well thickened on the external margin.

Length, excluding rostrum and telson, 38 mm.

Length of carapace, 13 mm.

Length of rostrum, 16 mm.

Length of antennal scale, 12 mm.

The general appearance of this species is well differentiated from the two preceding; from *A. pavonina* it differs first in its greater robustness, secondly in the shape of the rostrum and its number of teeth, thirdly in the comparative length of the joints of the first pair of pereiopods, fourthly in the shape of the second pereiopods, which do not expand distally to such a degree, and fifthly in the circumstance that the telson ends in four spines.

Dredged in from 10-12 fathoms, St. Vincent Gulf.

Types in the Adelaide Museum.

Angasia tomentosa, *n. sp.* Pl. xxix., figs. 1-4.

Body less elongate than in each of the preceding species, rather robust, covered on all parts with a harsh tomentum.

Carapace nearly as long as the first four segments of the pleon, a little elevated dorsally, anteriorly descending obliquely to the rostrum, deepening behind, the anterior margin has two small, subocular spines close together, the lower one more acute, the antero-lateral angle has a larger spine which projects further forward than the suboculars.

The pleon is very slightly geniculated at the third segment. The first five segments are dorsally carinate, the carinæ of the third, fourth, and fifth are posteriorly produced to spines, the sixth segment, although the longest, is comparatively short, it is without carina, its postero-lateral margin bears a long, lobed spine projecting over the base of the telson, and there is a small one at the posterior angle: the posterior margins of the segments are well rounded below, and the fifth has a spine on the oblique margin and another small one below it at the angle.

The telson is much longer than the sixth segment of the pleon, it is arched above, narrow, with two strong terminal spines, with a very small median tooth between them, it narrows rather more abruptly near the end, there is one small spine on each margin just above the end, and above them near the point of greater contraction one on each side, also marginal. These may be the representatives of the usual, quadrately placed spines, but they are not in the usual positions.

The rostrum is rigid, as long as the carapace, it is a little elevated distally and tapers to an acute point, its dorsal and lateral ridges are well marked, especially the latter, which extend for a short distance behind the orbits; on each side of the dorsal ridge there is a slight groove, a strong keel below bears five teeth, the more distal ones very remote; it is scantily setose between the teeth.

The ophthalmopods are rather short and thick.

The antennules are short; the peduncle is about one-fourth the length of the rostrum, the first joint is excavate above, its stylocerite spine being very strong and reaching well in advance of the end of the joint, the second and third joints are subequal in length, rather swollen above, together they are shorter than the ophthalmopod, the upper flagellum reaches rather more than half the length of the antennal scale, the lower one is a little longer than the scale.

The antennal scale reaches about two-thirds the length of the rostrum, it is broader than is usual in the other species, and is strengthened by two longitudinal ridges above, the distal spine is terminal, the external spine on the second joint of the peduncle is strong, and above it at the base of the scale there is an acute projection. The remaining joints of the peduncle are nearly one-fourth the length of the scale. The flagellum is slender and long.

The third maxillipeds reach nearly to the end of the antennal peduncle, of the three joints, the distal portion of the first, the second, and third are slightly excavated on their upper expanded surfaces, the third joint is acuminate distally, with a strong terminal spine, four others on the outer side and two or three on the inner; between the spines are very short teeth, the joint also along with the second is strongly setose on the inner side.

The first pereiopods resemble those of *A. robusta*, as also do the second, except a peculiar bend at the junction of the basis joint with the ischium, and there is only one spine on the ischium.

The third and fourth pairs are robust and long, the meri bear two spines below near the distal end, and are fringed with plumose setæ, the carpi are short and expand well distally, the propodi taper a little and are well spined on their posterior margins, the dactyli are short, little curved, and have two strong claws.

The fifth pair are rather less robust, the merus having only one spine. The pleopods are well developed, the rami subequal in length.

The uropods are rather narrow, as long as the telson.

The ova are small and numerous.

Length, excluding rostrum and telson, 28 mm.

Length of carapace, 13 mm.

Dredged by Dr. Verco, S.A. coast, about 20 fathoms.

Types, two, in Adelaide Museum.

Another species obtained belongs to the genus *Alope*, of the family *Hippolytidæ*, and is related to a species, *Alope palpalis*, White, which is figured in the zoology of the Erebus and Terror, Crust., pl. iv., fig. 1, and for a long time was imperfectly known until recently redescribed by Mr. G. M.

Thomson, of Dunedin, in Trans. Lin. Soc., 2nd series, vol. viii., pt. ii.

The present species differs from *A. palpalis* mainly in its smaller size, its non-expanded carapace, its less robust third maxillipeds, in the less divided state of the second pereiopods —except the carpus—and in many other minor particulars.

I am not aware of there being known any other species of this genus, so I take the liberty of slightly modifying Mr. Thomson's presentation to include the present species.

Tribe, CARIDEA.

Family, HIPPOLYTIDÆ.

Genus, **Alope**, *White*, 1847.

Carapace smooth, with supra-orbital spines and suborbital teeth.

Rostrum short, armed with teeth above and springing from a deep groove.

Ophthalmopods short, stout, ocelli well developed.

First antenna short, with two flagella.

Second antenna with large scale (scaphocerite) and long flagellum.

Mandible with shortened or almost obsolete cutting plate, and three jointed palpi.

First maxilla two or three branched.

Second maxilla three branched with wide mastigobranchial plate.

First maxilliped with two lobed mastigobranchia.

Second maxilliped with short podobranchial plume.

Third maxilliped very long and pediform, without branchia.

First pereiopod strong, chela well developed.

Second pereiopod slender, long, minutely chelate, carpus seven-jointed.

Telson moderately narrow.

Third to fifth pereiopods with two clawed dactyli.

Pleurobranchiæ, five.

Podobranchia, one, on the second maxilliped.

Alope australis, *n. sp.* Pl. xxx., figs. 1-7.

Body smooth, white, with many very small red spots. short and robust. Carapace not carinated dorsally or swollen, but slightly narrowing anteriorly. The two long, supra-orbital spines are connected dorsally by a U-shaped ridge, in the fork of which is a small, broad-based spine, and immediately in front of this spine in a depression arises ridge, in the fork of which is a small, broad-based spine,

eyes, acute, slightly depressed, with lateral ridges, acuminating on all sides, with five forward directed spines above, entire below, with the apex a little laterally constricted. Laterally from the supraocular spines a ridge is continued on each side in a curved manner to a prominent antennal spine. This ridge forms the posterior margin of a lunate depression (half of the depression which the rostrum divides), and its anterior margin is excavated to receive the eye peduncle. The antero-lateral angles are rounded, and the remainder of the lateral margins of the carapace are fringed with short hair.

The pleon is not carinated or geniculate, it narrows regularly in the transverse direction after the second segment. The pleura of the three anterior segments are moderately deep, those of the first overlapping the carapace, those of the second the first and third, though not extensively. The sixth segment is shorter than the two preceding ones together, and about as long dorsally as the third; on its posterior margin it bears two triangular spines, which project each side of the telson, the posterior angles are acute, but do not project as far as the above spines, the sternal surface has an obtuse preanal lobe.

The antennular peduncle reaches to about the middle of the antennal scale, the basal joint is much expanded and excavate above, and reaches well beyond the eyes, the stylocerite spine, which is not deeply cut from the body of the joint, reaches a little beyond the end, there is a small lobe at the inner proximal end, and a tuft of plumose setæ near the distal end above, the second and third joints are subequal in length, and are together shorter than the first, each three joints has distally and above a little transverse comb of short spines and below the first and second bear tufts of plumose setæ, the upper flagellum is stout, and subequal in length to the peduncle, the lower is slender and about twice as long. The ophthalmopods are stout and short, ocelli join the pigmented portion above.

The antennæ have moderately broad scales, which only slightly narrow distally. The external distal spine is well below the apex, there is a small external spine on the outer side of the second joint of the peduncle, and a group of plumose setæ on the third joint on the inner side, the fifth joint has distally a tuft of rather rigid plumose setæ, this joint reaches about two-thirds the length of the scale, the flagellum is strong, and nearly as long as the animal's body.

In the mandible the cutting plate is extremely rudimentary; the molar process is strong and very deflexed, there is a three-jointed palp, the basal joint of which is expanded and produced at the outer angle.

The first maxilla is three-lobed, the outer branch bifid, with one or two long setæ on each division.

In the second maxillipeds the exopod is very large, the last two joints of the five-jointed endopod deflexed.

In the third maxillipeds the endopod is very long, reaching forwards as far as the lower flagellum of the antennule, the three joints are well beset with hairs. The first joint is longer than the third, the second about one-third the length of the third, the third is more vertically compressed, slightly curved and a little tapering, very hairy on the inner side, as also is the second, with four or five strong, divergent spines at the end. The exopod is very small.

The first pereiopods are moderately strong. Both merus and carpus are distally excavate to receive prominences of the succeeding joints, which are articulated at their inner proximal angles. The palm is smooth and scarcely compressed, with a slight longitudinal sulcation on the inner side, the fingers are a little more than half as long as the palm, they are curved and are distally cut into two or three corneous teeth, and are setose on their apices and margins, and excavate, the carpus and palm together are subequal in length to the ischium and merus together. The merus has a row of small teeth at the outer distal end, and the margin of the cup-like carpus has—besides the shallow one at the articulation of the palm—two deep insinuations near the margin, on the inner side there is a row of pectinate setæ.

The second pereiopods are long and slender. The carpal joint is divided into seven, the first four become successively shorter, the fourth, fifth, and sixth are subequal in length, the seventh about as long as the third, the palm is a little longer than the seventh division of the carpus, the fingers are half as long as the palm, the ischium and merus together are subequal in length to the succeeding joints together, the merus is a little longer than the ischium, and together they form a slight curve. The end of the last joint of the carpus has a pencil of long bristles, and some are situated on the fingers.

The following three pairs of pereiopods are moderately stout, the last pair a little weaker, they are sparely spined, the ischi and meri together are stouter and subequal in length to the succeeding joints, the carpi are slightly curved, the propodi slightly compressed and a little curved; the dactyli are strong, curved, with two strong claws, and a few spines inward from them.

The pleopods are well developed, the rami subequal. The uropods have moderately broad rami, the external one has a tooth and articulated spine, with a sinuate division somewhat distant from the end, the outer margin is straight.

The inner ramus is ovate-lanceolate and as long as the outer both are elegantly fringed. The telson is shorter than the uropods, tapering, with a shallow median sulcation and the usual quadrately placed spines, and a fasciculus of setæ near the proximal end above; it terminates in five teeth and two spines, and is fringed to about halfway up the sides.

The ova are small and numerous.

Length from base of rostrum to base of telson, 27 mm.

Length of carapace, 10 mm.

Obtained in shallow water at Smith's Bay, Kangaroo Island, by R. Baker, January, 1903.

Type specimens, two, in Adelaide Museum.

A sixth species is unique; a female found by Mr. Zietz amongst Dr. Verco's dredgings from 20-30 fathoms. It belongs to the family *Crangonidæ*, of the same tribe as the preceding, and is related to both the genera *Pontophilus* and *Sabinea*, with tendencies towards *Pontocaris*, but I am of opinion that it requires to be placed in a new genus, mainly for the following reasons:—First, the shape of the body and the relationship of the parts, though the cephalo-thorax is not so long, it is quite as bulky as the pleon; secondly, the peculiar position of the eyes, their distance apart and sessile character; thirdly, though the second pereiopods are reduced in length and non-chelate, they are still comparatively strong, and reach as far as the carpus of the first pair; fourthly, the telson is broad and more *Alpheus*-like than in any figures of other species of the same family I have seen; unfortunately, I am not able to state whether the branchiæ are six or seven.

Tribe, CARIDEA.

Family, CRANGONIDÆ.

Genus, **Vercoia**, *n. gen.*

Body short.

Carapace deep, as long as the first four segments of the pleon, little compressed laterally, broad, produced at the antero-lateral angles, its lower margin making an obtuse angle about the middle.

Eyes distant, large, on very short peduncles, which are hidden by the cephalic portion of the carapace, in distinct orbits formed above by that portion of the carapace and below by the produced antero-lateral regions, and anteriorly by processes of the antennules.

Rostrum shaped as is usual in *Pontophilus*, placed far in advance of the eyes.

Antennular peduncles very short, much hidden by the cephalo-thorax, the joints with external lateral expansions, that of the first completing the orbit in front.

Antennal scales short, feeble, subtriangular, without distal spines, flagella short.

Third maxillipeds long, the distal joints vertically compressed.

First pereiopods robust.

Second pereiopods non-chelate, shortened but rather robust, reaching as far as the carpal joints of the first, carpus and propodus together about as long as the merus.

Third pereiopods styliform.

The pleopods have much expanded peduncles, which become faced outwards in the female, the rami are curved, especially the inner.

The uropods and telson are short, the telson broad, rounded at the end, and ciliate, but not spined.

There is a ridge on the ventral surface between the first and second pairs of pereiopods, terminating anteriorly in a projecting spine between the first pair.

Vercoia gibbosa, *n. sp.* Pl. xxxi., figs. 1-4.

Body short, very much depressed at the first segment of the pleon, gibbous and much sculptured with many obtuse prominences, but no spines. Carapace of rigid consistence, deep, dorsal surface broad, rather depressed, consisting of a shield-like platform, which occupies nearly the whole length; this is rather excavate in the gastric region, and anteriorly and medianly bears the short, slightly excavate, and entire rostrum. Laterally from the rostrum on each side is a lobe, slightly insinuated on the margin projecting in front of the eye, and forming the upper anterior part of the orbit. The lateral margin of the platform on each side is marked first by a small tooth immediately over the eye, then by a short, slightly sigmoid, detached ridge, and behind this a short, straight ridge beginning abruptly. The posterior boundary on each side of the median line consists of a small, incurved, oblique ridge, and behind these a pair of longer, converging ridges, forming together a broad V, the apex of which reaches close to the posterior margin of the carapace. The surface of the anterior or gastric portion of this platform is smooth, but the cardiac portion has medianly a longitudinal ridge, divided into three portions—or obtuse carinæ, the most anterior part of which is short and low—not visible from a side view, the second and third portions are strongly elevated, the third being declivous behind towards the posterior margin of the carapace; on each side of the middle portion is a short, transverse, scale-like ridge. The antero-lateral angles of the carapace are produced considerably in advance of the eyes to near the bases of the antennal scales, from them on each side an oblique ridge extends backward and

slightly downward, for about half the length of the carapace, and between this hepatic ridge, which is very pronounced, and the lateral margin is another faintly marked, which bifurcates behind and soon disappears. The lateral margin of the carapace forms an obtuse angle immediately over the base of the third pereiopod. Posterior to these ridges and higher up is another short, oblique ridge, divided into two anteriorly abrupt portions, and higher still and more posterior there is a short, slightly sigmoid ridge, whose end reaches close to the posterior margin of the carapace, and in the postero-lateral region there are two short, slightly oblique ridges with very obtuse anterior ends. These have a few faintly marked, scale-like projections preceding them. The antenal and hepatic regions also have a few short, scale-like projections, viz., one a little below and behind the eye, with two or three more higher up about the middle of the carapace, and one or two on the antennal region.

The pleon narrows considerably after the third segment both laterally and vertically, it is much sculptured, and the second and third segments are strongly humped in the middle line. The first segment is very short, and very slightly overlaps the carapace. The three posterior segments also are short and broadly but not deeply keeled dorsally, they are marked with one or more scale-like ridges on the sides; the second and third are more sculptured above and at the sides than the others, and are only moderately produced at the sides. The sixth segment is longer than either of the two preceding ones, it is much overlapped at the sides by the fifth, and ventrally has a broad, preanal lobe bearing two acute prominences.

The telson is a little longer than the sixth segment, it is rather broad, especially at the base, medianly sulcate above, rounded at the distal end, and ciliate, but not spined, dorsally there are two scales on each side of the median sulcation, occupying the place of the usual quadrately placed spines.

The appendages are mostly short.

The eyes are as stated above.

In the antennules the first joint of the peduncle is hidden under the carapace except its lateral lobe. The peduncle does not extend much further than the rostrum. The upper flagellum does not reach as far as the antennal scale, the lower one is very small.

The antenna arises in a recess of the anterior margin, its scale has a small triangular process situated near its base on the upper surface. The distal peduncular portion is scarcely more than half the length of the scale, the flagellum is slender and very short.

The third maxillipeds project well in advance of the scales of the antennæ, the last two joints are broad and fringed with short setæ. The antepenultimate joint has a short distal keel below.

The first pereiopods are sub-chelate, they are capable of reaching as far forwards as the maxillipeds, the merus is much compressed, the carpus very short, and its distal margin is divided into lobes, the carpus and palm are together about equal in length to the ischium and merus together. The palm is robust, about twice as long as broad, swollen much proximally—on a side view—with a strong spiniform pollex and moderately strong dactylus.

The second pereiopods are short, non-chelate, not very weak, reaching nearly as far as the carpus of the first, the terminal joint is small and acute, the penultimate joint bears a small distal spine in the position of a pollex, the limb is slightly setose.

The third pereiopods are very slender, styliform, with the terminal joint very acute, it reaches forward nearly as far as the antennal scale. The next two pairs of pereiopods are robust, very sparingly setose, with strong, simple dactyli. The four anterior pairs of pleopods are short, with very broad peduncles presented outwards. The rami are curved and foliaceous, the inner ones falcate.

The uropods are short and rather weak, the outer ramus is subtriangular, without a division, and with a very small external spine, the inner ramus is ovate and narrower.

The ova are large and few.

Length, excluding rostrum and telson, 14 mm.

Length of carapace, 6 mm.

Type, one female, in Adelaide Museum.

DESCRIPTIONS OF PLATES.

Plate XXVII.

Fig. 1. *Angasia elongata*, n. sp., enlarged.
Fig. 2. Third maxilliped of same, enlarged.
Fig. 3. First pereiopod of same, enlarged, outer view.
Fig. 4. Second pereiopod of same, enlarged.
Fig. 5. *Angasia kimberi*, n. sp., enlarged.

Plate XXVIII.

Fig. 1. *Angasia robusta*, n. sp., enlarged.
Fig. 2. Third maxilliped of same, enlarged.
Fig. 3. Telson of same, enlarged.
Fig. 4. Opthalmopod, antennule and antennal scale of same, enlarged.
Fig. 5. Rostrum of same, enlarged.
Fig. 6. Mandible of same, enlarged.
Fig. 7. First pereiopod of same, inner view, enlarged.
Fig. 8. Second pereiopod of same, enlarged.

Plate XXIX.

Fig. 1. *Angasia tomentosa*, n. sp., enlarged.
Fig. 2. Third maxilliped of same, enlarged.
Fig. 3. First pereiopod of same, inner view, enlarged.
Fig. 4. Second pereiopod of same, enlarged.

Plate XXX.

Fig. 1. *Alope Australis*, n. sp.
Fig. 2. *Alope Australis*, frontal parts of same, much enlarged.
Fig. 3. *Alope Australis*, first pereiopod of same, much enlarged.
Fig. 4. *Alope Australis*, mandible of same, much enlarged.
Fig. 5. *Alope Australis*, under side of antennal peduncle of same, much enlarged.
Fig. 6. *Alope Australis*, second pereiopod of same, enlarged.
Fig. 7. *Alope Australis*, uropods and telson of same, much enlarged.

Plate XXXI.

Fig. 1. *Vercoia gibbosa*, n. sp., lateral view.
Fig. 2. *Vercoia gibbosa*, dorsal view.
Fig. 3. *Vercoia gibbosa*, frontal parts of same, much enlarged
Fig. 4. *Vercoia gibbosa*, second pereiopod of same, much enlarged.